US Patent Application

TITLE

An Igniter with a Safety Lock

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CONFIDENTIAL

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An Igniter with a Safety Lock

Field of the Invention:

The present utility model relates to an igniter and, in particular, to an igniter using inflammable gas as fuel stored in liquidity and having a safety lock.

Background of the Invention:

Currently, igniters using inflammable gas (e.g. butagas) as fuel stored in liquidity generally include the following:

1) a housing;
2) a gas storage which has an outlet valve and is connected to the interior of said housing;
3) a combustion nozzle connected to an outlet valve in a storage assembly;
4) an outlet control means for controlling the gas from said outlet valve;
5) an igniting means provided in said housing;
6) a sliding switch provided in said housing, which may enact said igniting means.

The ignition manner of such igniter is to directly push said sliding switch, making said outlet valve release the gas and enable said igniting means to spark to inflame the gas sprayed out from said combustion nozzle. With such a structure, one action may ignite the inflammable gas from the nozzle, producing a high-temperature flame, and consequently it may cause danger when said switch is played or carelessly touched by children.

Summary of the Invention

One objective of the present utility model is to provide an igniter with a safety lock which may remove the above defects of the prior art. The igniter with such a safety structure has a lock mechanism which may prevent the unwanted one-action ignition and mis-operation of an adult, and danger caused to children.

The objective of the present utility model is achieved by an igniter with a safety lock, including a housing, a gas storage assembly composed of a gas case and an outlet valve, an outlet control means provided on said outlet valve for closing and opening said outlet valve, a combustion nozzle connected to said outlet valve of said gas storage assembly, a support rack provided in said housing, an igniting means provided on said support rack in said housing, a sliding switch which is provided in said housing, partially protruding outside of said housing and may drive said igniting means and said outlet control means to operate, characterized by further comprising a pulley which is provided on said sliding switch and pivotally connected to said sliding switch by a bolt and comprises a flange on one side of said support rack, and said support rack has a protrusion adjacent to said flange and, when said pulley is in a still state, has its protrusion hinder said flange of said pulley, making said sliding switch unable to ignite, and when said pulley is rotated to move said flange away from said protrusion of said support rack, makes said sliding switch complete ignition.

Further said sliding switch also includes a sliding button and a connecting means.

Furthermore a reset spring is provided on said connecting means, having its one end act on one side of said pulley.

Furthermore said pulley also has a limiting means for limiting rotation of said sliding button. Said limiting means is a protrusion provided on said pulley, or a said bolt on said pulley.

Brief Description of the Drawings

Next, further description will be made to the present utility model by reference to the following drawings and embodiment wherein:

Fig. 1 is a drawing showing the structure of the present utility model.

Fig. 2 is a drawing showing the structure of the sliding switch, pulley and reset spring at operation of the present utility model.

Fig. 3 is a drawing showing the structure of another embodiment of the sliding switch, pulley and reset spring at operation of the present utility model.

Wherein:1 - housing; 2 - gas storage assembly; 21 - gas case; 22 - outlet valve; 23 - inlet valve; 3 - outlet control means; 4 - combustion nozzle; 5 - support rack; 51 - protrusion; 6 - igniting means; 7 - sliding switch; 71 - sliding button; 72 - connecting means; 721 - lower end of connecting means; 722 - upper end of connecting means; 8 - pulley; 81 - bolt; 82 - flange; 83 - limiting means; 83’ - bolt; 9 - reset spring.

Preferred Embodiments of the Invention

Refer to Fig. 1, an igniter with a safety lock according to the present utility model includes a housing 1, a gas storage assembly 2 composed of a gas case 21 and an outlet valve 22, an inlet valve 23; an outlet control means 3 provided on said outlet valve 22 for controlling closing and opening of said outlet valve 22, a combustion nozzle 4 provided on the head portion of said igniter and connected to said outlet valve 22 within said gas storage assembly 2, a support rack 5 is provided in said housing 1, an igniting means 6 amounted on said support rack 5 in said housing 1, a sliding switch 7 which is provided in said housing 1, partially protruding outside of said housing 1 and can drive said igniting means 6 and said outlet control means 3 to operate and may include a sliding button 71 and connecting means 72, wherein said sliding button 71 may be partially inserted into said connecting means 72 and connected one another, and a pulley 8 connected via the bolt 81 to said sliding switch 7, wherein said pulley 8 may rotate around said sliding switch 7 and has its inner side formed into a flange 82, and a protrusion 51 is formed on said support rack 5 and on upper side of said flange 82. When operated, said pulley 8 is rotated by hand finger making the flange 82 of said pulley 8 moves from lower side of protrusion 51, and then when hand finger moves upwards pushing said sliding button 71 of said sliding switch 7, causing lower end 721 of said connecting means 72 to lift the core of said outlet valve 22 and release the inflammable gas from storage 2 via outlet valve 22 to spray out from said combustion nozzle 4. Thus one finger's twice operation may easily and conveniently complete the ignition. When said finger is released, reset spring 9 provided on said connecting means 72 has one end act on one side of said pulley 8, making its flange 82 thereon return to the underneath of said protrusion 51 of said supporting rack 5, and in this state, if a child plays with it, he can not push the sliding button 71 on said sliding switch since when the igniter is in a still state, said protrusion 51 hinders the movement of said flange 82, thus safeguarding child from danger.

Said pulley 8 is amounted in said sliding button 71 axially and rotationally, and said pulley also includes a limiting means for limiting rotation of said sliding button, i.e. a limiting means 83 in a convex shape provided on said pulley, or a bolt 83' provided on said pulley (see Fig. 3). When hand finger is released, said reset spring 9 acts to rotate said pulley 8 axially, and said limiting means 83 on said pulley 8 or bolt 83' is partially blocked by said connecting means 72 as seen from Fig. 1, preventing said sliding button 71 from rotating around to SBC case.

Though the detailed description by reference to the drawings and embodiments is made above, it is apparently clear to those skilled in the art that the above embodiments are not limitation thereto but only for description of the present utility model. Within the spirit of the present utility model, there may be modifications and variations to the above embodiments which fall within the scope of present utility model.